CASE REPORT: SILICONE HYDROGEL MICROBIAL KERATITS

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HISTORY AND SYMPTOMS

CONTACT LENS HISTORY AND CURRENT CORRECTION

PATIENT DEMOGRAPHICS
26 year old Female

CL HISTORY
Daily Disposable CL wear: 2 Years
Silicone Hydrogel Extended CL wear: 3 Years
No previous ocular adverse events

LENSES WEARING AT TIME OF REPORTED KERATITS
Extended Wear, Monthly Replacement

Eyesight All Day All Night

ACTION: Suggested hospitalisation & 6 week trial of soft lenses

RE-SCAR TISSUE
Central Cornea

1.00 - 1.50D Astigmatism Increase with pupil size 3mm - ~1.00 / 7mm~ ~2.50D

VISION AND ABERRATION ASSESSMENT

The space between the refractive and the anterior surface is filled with corneal scaring of affected eye

CONCLUSION

It is important that contact lens practitioners be able to promptly detect and effectively manage microbial keratitis to minimize corneal tissue involvement and anterior chamber cell loss.

DISCUSSION

This case report highlights several important clinical points regarding the management and the true effects of contact lens Infective Keratitis (IK).

• IK even though rare with DK silicone hydrogel indicates that high supply of oxygen is not sufficient to prevent most serious contact lens related adverse event.
• The high elastomeric characteristics of the contact lens may have contributed to corneal mechanical damage creating a portal of entry for the organism.
• The failure to recognize the severity of the problem, and to take immediate action most likely resulted in greater permanent corneal damage and visual loss.
• Routine clinical assessment of patients post IK under estimate the extent of the permanent changes:
  • Severe VA at 4 months was normal whereas true LogMar VA was 1.0 to 1.5 lines reduced
  • Corneal aberrations were 3 to 9 times higher than the fellow eye
  • Endothelial loss resulted in a endothelial cell density typical of an 80 year old.

CONCLUSION

• It is important that contact lens practitioners are able to promptly detect and effectively manage microbial keratitis to minimize corneal tissue involvement and anterior chamber cell loss.
• Past IK evaluation should include a detailed examination of the cornea, including endothelial cell count especially if the patient considers returning to contact lens wear.
• Contact lens IK may have long term implications not previously anticipated (endothelial decompensation).

REFERENCES


INVESTIGATIONAL TECHNIQUES

CONFOCAL MICROSCOPY - STROMA

The ConfoScan 2 allows the corneal tissue to be viewed at high magnification with the help of endoreptor microscopy it allows the slit filter out the reflected light from the unfocussed layers, thus allowing the cornea to be clearly viewed.

Elevated stromal inflammatory activity not observable in clinical practice (Eye white and quiet)

CORNEAL ABERRATIONS

IK produced a 50% loss in endothelial cells (density typical of a 80 year old)

To our knowledge, this has not been previously reported in the literature.